We claim:

1. An apparatus, comprising:
an integrated circuit including
a first processor with a first dedicated cache;
a second processor with a second dedicated cache; and
control logic coupled to the first and second dedicated caches to transfer first data from the first dedicated cache to the second dedicated cache entirely within the integrated circuit.

2. The apparatus of claim 1, wherein:
the control logic is to transfer the first data if the first data is a cache line in the first dedicated cache and not in the second dedicated cache.

3. The apparatus of claim 1, wherein:
the control logic is to transfer the first data if the first data is a modified version of a particular cache line and the second dedicated cache contains an unmodified version of the particular cache line.

4. The apparatus of claim 1, further comprising:
a coherency unit to perform snoop operations on the first and second dedicated caches.

5. The apparatus of claim 1, wherein:
the control logic is further to transfer second data from the second dedicated cache to the first dedicated cache entirely within the integrated circuit.

6. The apparatus of claim 1, wherein the integrated circuit further includes:
a shared cache coupled to the control logic and to the second dedicated cache to provide the first data to the second dedicated cache;
wherein the control logic includes a write buffer to receive the first data from the first dedicated cache and to provide the first data to the shared cache.

7. The apparatus of claim 1, wherein the integrated circuit further includes:
a shared cache coupled to the control logic, to the first dedicated cache, and to the second dedicated cache;
wherein the control logic is further to transfer second data from the second dedicated cache to the first dedicated cache;
wherein the control logic includes a first write buffer to receive the first data from the first dedicated cache and to provide the first data to the shared cache, and further includes a second write buffer to receive the second data from the second dedicated cache and provide the second data to the shared cache;
wherein the shared cache is to provide the first data to the second dedicated cache and to provide the second data to the first dedicated cache.

8. The apparatus of claim 1, wherein:

the control logic includes a fill buffer coupled to first and second dedicated caches to receive the first data from the first dedicated cache and to provide the first data to the second dedicated cache.

9. The apparatus of claim 1, wherein:

the control logic includes a first fill buffer coupled to the first and second dedicated caches to receive the first data from the first dedicated cache and to provide the first data to the second dedicated cache; and

the control logic includes a second fill buffer coupled to the first and second dedicated caches to receive second data from the second dedicated cache and to provide the second data to the first dedicated cache

10. The apparatus of claim 1, wherein the control logic includes:

a multiplexer coupled to the first and second caches to receive the first data from the first dedicated cache and to provide the first data to the second dedicated cache.

11. The apparatus of claim 1, wherein the control logic includes:

a first multiplexer coupled to the first and second caches to receive the first data from the first dedicated cache and to provide the first data to the second dedicated cache; and

a second multiplexer coupled to the first and second caches to receive second data from the second dedicated cache and to provide the second data to the first dedicated cache.

12. A method, comprising:

transferring first data from a first dedicated cache of a chip multi-processor to control logic in the chip multi-processor, entirely within the chip multi-processor; and

subsequently transferring the first data from the control logic to a second dedicated cache of the chip multi-processor, entirely within the chip multi-processor.

13. The method of claim 12, further comprising:

transferring second data from the second dedicated cache to the control logic, entirely within the chip multi-processor; and

subsequently transferring the second data from the control logic to the first dedicated cache, entirely within the chip multi-processor.

14. The method of claim 12, wherein:

the transferring the first data from the first dedicated cache includes transferring the first data from the first dedicated cache to a write buffer;

the transferring the first data from the control logic includes transferring the first data from the write buffer to a shared cache.

15. The method of claim 14, wherein:

the transferring the first data from the control logic further includes transferring the first data from the shared cache to the second dedicated cache.

16. The method of claim 12, wherein:
the transferring the first data from the first dedicated cache includes transferring the first data from the first dedicated cache to a fill buffer;
the transferring the first data from the control logic includes transferring the first data from the fill buffer to the second dedicated cache.

17. The method of claim 12, wherein:
the transferring the first data from the first dedicated cache includes transferring the first data from the first dedicated cache to a multiplexer; and
the transferring the first data from the control logic includes transferring the first data from the multiplexer to the second dedicated cache.

18. A system, comprising:
a main memory,
a chip multiprocessor coupled to the main memory and including:
a first processor with a first dedicated cache;
a second processor with a second dedicated cache; and
control logic coupled to the first and second dedicated caches to transfer first data from the first dedicated cache to the second dedicated cache entirely within the chip multiprocessor.

19. The system of claim 18, wherein:

the control logic is further to transfer second data from the second dedicated cache to the first dedicated cache entirely within the chip multiprocessor.

20. The system of claim 18, wherein the chip multiprocessor further includes:

a shared cache coupled to the control logic and to the second dedicated cache to provide the first data to the second dedicated cache;

wherein the control logic includes a write buffer to receive the first data from the first dedicated cache and to provide the first data to the shared cache.

21. The system of claim 18, wherein:

the control logic includes a fill buffer coupled to first and second dedicated caches to receive the first data from the first dedicated cache and to provide the first data to the second dedicated cache.

22. The system of claim 18, wherein the control logic includes:

a multiplexer coupled to the first and second dedicated caches to receive the first data from the first dedicated cache and to provide the first data to the second dedicated cache.

23. A machine-readable medium that provides instructions, which when executed by a set of one or more processors, cause said set of processors to perform operations comprising:

transferring data from a first dedicated cache in an integrated circuit to control logic in the integrated circuit, entirely within the integrated circuit; and subsequently transferring the data from the control logic to a second dedicated cache of the integrated circuit, entirely within the integrated circuit.

24. The medium of claim 23, wherein:
the transferring the data from the first dedicated cache includes transferring the data from the first dedicated cache to a write buffer; and
the transferring the data from the control logic includes transferring the data from the write buffer to a shared cache and subsequently transferring the data from the shared cache to the second dedicated cache.

25. The medium of claim 23, wherein:
the transferring the data from the first dedicated cache includes transferring the data from the first dedicated cache to a fill buffer; and
the transferring the data from the control logic includes transferring the data from the fill buffer to the second dedicated cache.

26. The medium of claim 23, wherein:
the transferring the data from the first dedicated cache includes transferring the data from the first dedicated cache to a multiplexer; and
the transferring the data from the control logic includes transferring the data from the multiplexer to the second dedicated cache.